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September 5, 1972

MEMORANDUM

TO: ERTS Administrators
National Aeronautics and Space Administration

FROM: M. F. Baumgardner, ERTS Principal Investigator

SUBJECT: Type I Report for Period July 1 - August 31, 1972

Proposal No.: UN630 (SR 050)

Title: Evaluation and Comparison of ERTS Measurements of Major Crops and Soil Associations for Selected Sites in the Central United States (originally Evaluation and Comparison of the Utility of ERTS-A Measurements Over Selected Sites in Europe, North America, and South America)

Objective:

To evaluate the utility of ERTS measurements for use in identifying, locating, characterizing and mapping differences in vegetation and soils over a wide range of climatic, geographical, and ecological conditions.

Work Performed:

Although no ERTS data from the test sites of this proposal were received during this reporting period, three tasks were performed in preparation for the receipt of ERTS MSS data. First, reference materials describing the soils, geology, climate, and agriculture have been assembled for all test sites in this proposal; second, details for data analysis procedures have been formulated, and third, a rather complex ground observations plan was developed for the ten counties in the Lubbock, Texas Regional Test Site.

These tasks were accomplished in accordance with the work schedule.

Analysis of Work Progress:

Progress on preparation for analysis of ERTS data has been satisfactory. Difficulty has arisen in the recruitment of graduate students to work on this project. Since no ERTS data nor aircraft photographic or MSS data from the test sites of this proposal have yet been received at LARS, it is impossible to comment on progress in data analysis for these sites.

However, ERTS data obtained on July 25, 1972, over the Lake Texoma region north of Dallas, Texas were received and analyzed. Multispectral scanner data were analyzed on a digital computer to produce a map of different land uses, including forested areas, natural rangelands, improved pastures, four spectral classes of water, and rectangular fields of cotton and grain sorghum. In the areas of Collin and Grayson Counties, Texas, computer-implemented analysis of ERTS data resulted in the separation of significant geologic features, parent materials, and soil associations.

A large ground observation program has been initiated in the Lubbock Regional Test Site. Approximately sixty ground observers will be identifying and characterizing the ground cover (crops, soils, other) of more than 2,000 fields in a 10 county area at the time of each ERTS pass. Having a good sampling of accurate ground observations will be of great assistance in improving analytical results and assessing reliability of ERTS and aircraft data.

Future Work:

During the next two-month period ERTS data should be received from each of the test sites of this proposal. The data will be analyzed by computer and interpretations will be made. Formulation of a data analysis plan will be completed.

Operating Personnel:

During this reporting period one graduate student was added to the project staff to work fulltime during the month of August. No other personnel changes occurred.

Publications:

To date no manuscripts reporting analysis of ERTS data have been submitted for publication.

Recommendations:

Since no ERTS data from the test sites of this proposal were received and analyzed during this reporting period, no recommendations for change are made.

Changes in Standing Order Products:

No changes are contemplated at this time. It is the understanding of the principal investigator that all CCT requested in this proposal are on standing order.

ERTS Image Descriptor Forms: None available.

Data Request Forms: None submitted during this period.